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1 Service Strategy

Testing:	Worldwide, with the Test Certificate
Repairs, pneumatics:	Replacement of subassemblies, and on component level
Repairs, electronics:	Replacement of printed circuit boards and/or sensors

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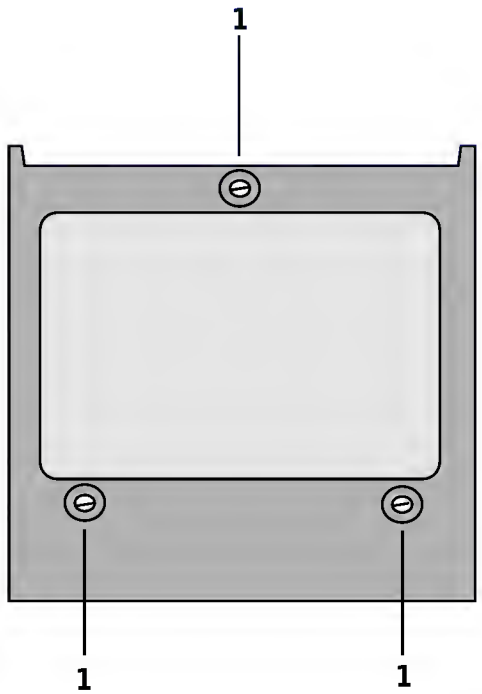
2 Opening the Oxylog 2000

Bottom View

- Loosen the screws 1.

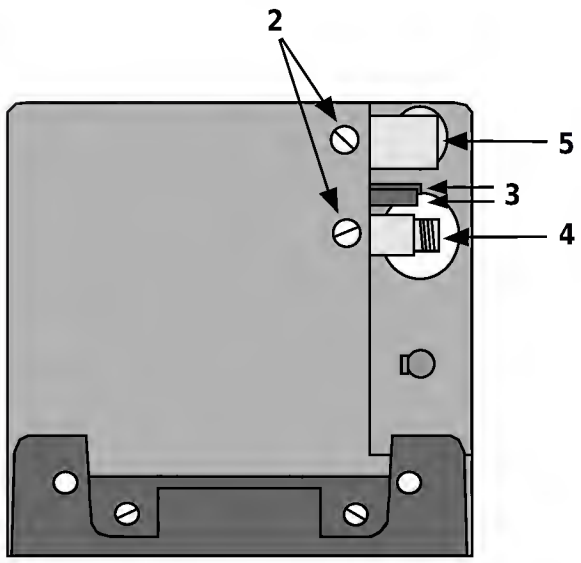


Top View

Important:

When removing the screws **2** and **3** note the length/diameter of the screws for later reassembly.

- Remove the screws **2** and **3** makes sure not to lose the washers.
- Pull out the gas connection **4** and the patient outlet **5.**



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Removing the Withdrawable Unit

- Gently pull out the withdrawable unit and disconnect the cable connectors **6**.

Caution:

When pulling out the withdrawable unit make sure not to damage the leads.

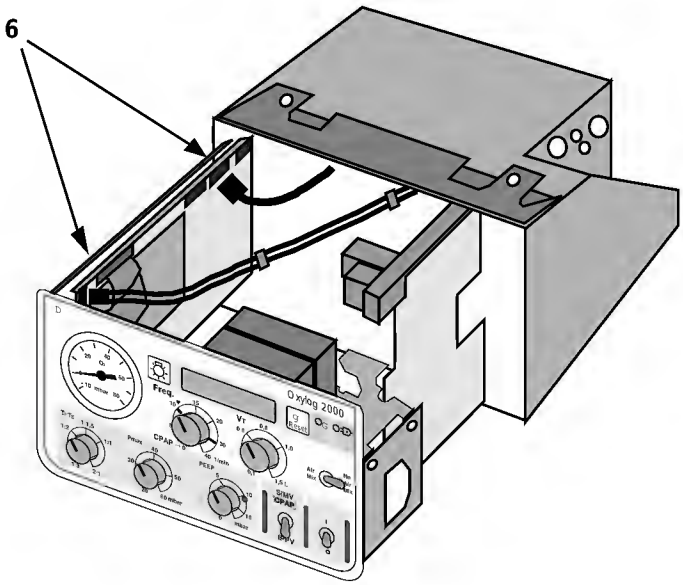

Fig. 1: View of the Oxylog 2000

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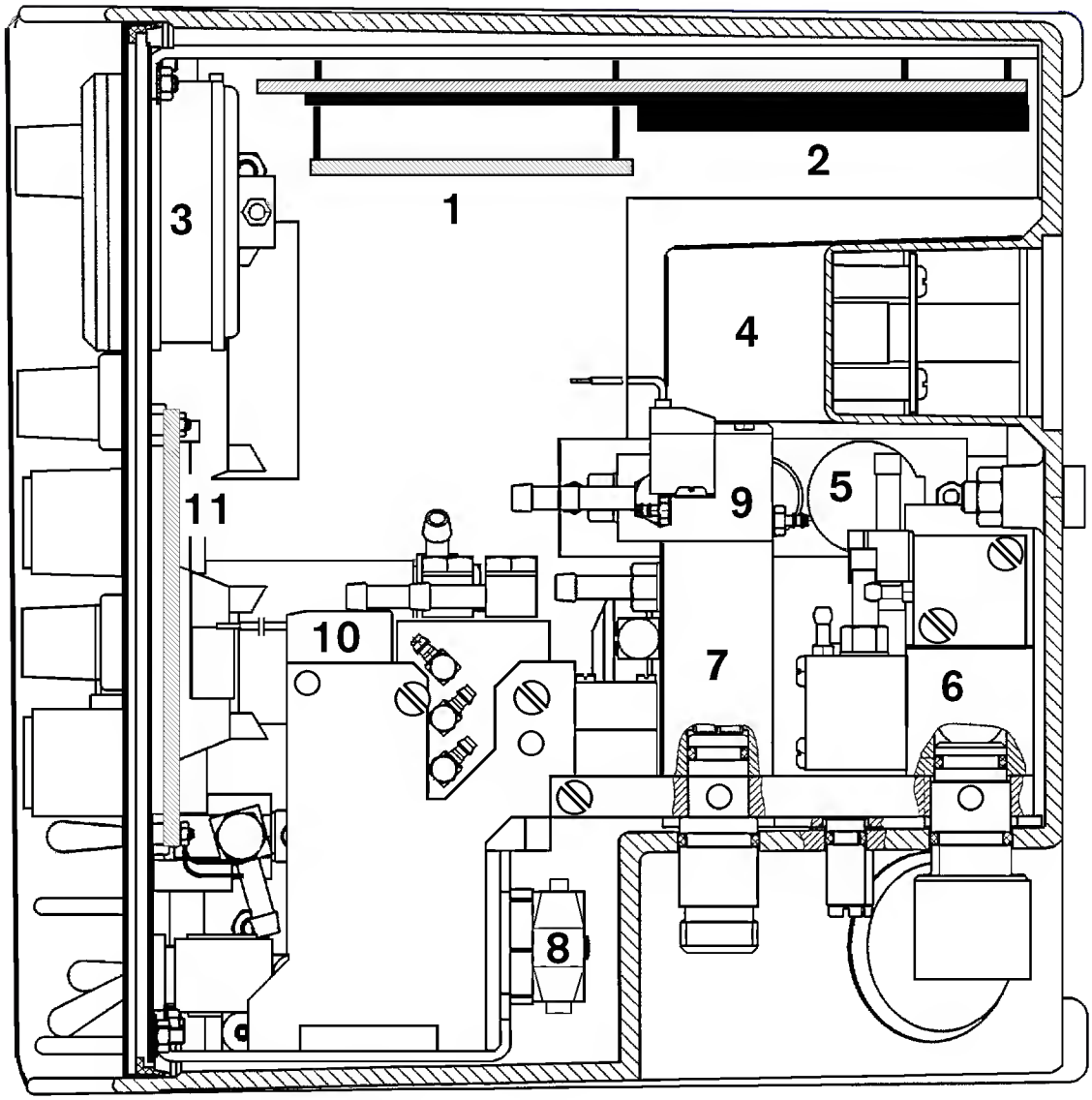
3 Layout of the Pneumatics



Legend

1 Sensor PCB
2 Control PCB
3 Manometer
4 NiCd or AlkMn battery pack
5 MV valve
6 Pneumatic assembly
7 Gas supply inlet
8 Pressure regulator
9 Autozero valve
10 I:E valve, PN valve
11 Display PCB

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4 Control PCB

The Control PCB contains the EPROM to be replaced in the event of a software change. This board does not have any serviceable parts. Should an error occur, you must replace the entire board.

Important:

The EPROM must be mounted on the new Control PCB.

Important!

A modified Control PCB will be fitted into Oxylog 2000 with software version 2.xx or higher. After replacing the Control PCB, it is no longer necessary to adjust the service switch for calibration of the minute volume valve.

The minute volume valve can be adjusted without having to open the ventilator.

Make sure to order the correct Control PCB which matches the software version installed in your Oxylog 2000.

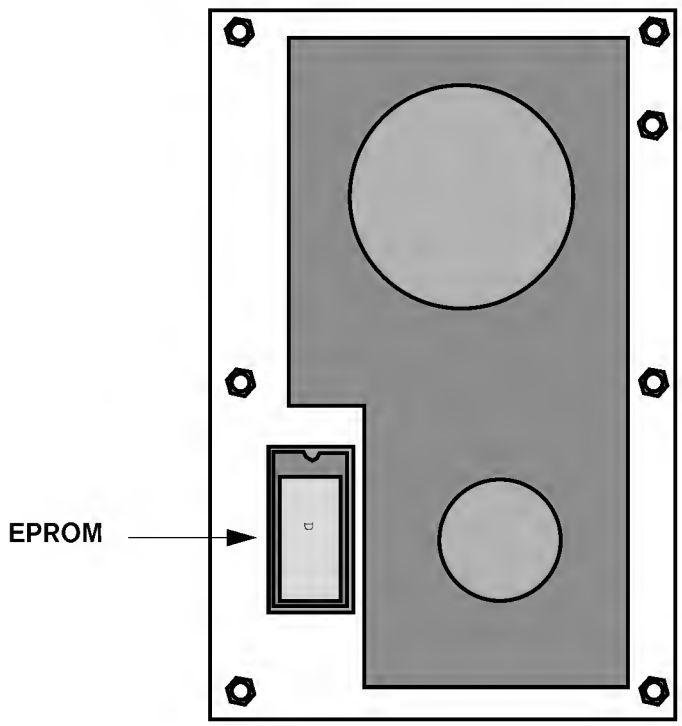

Fig. 2: Control PCB, soldering side

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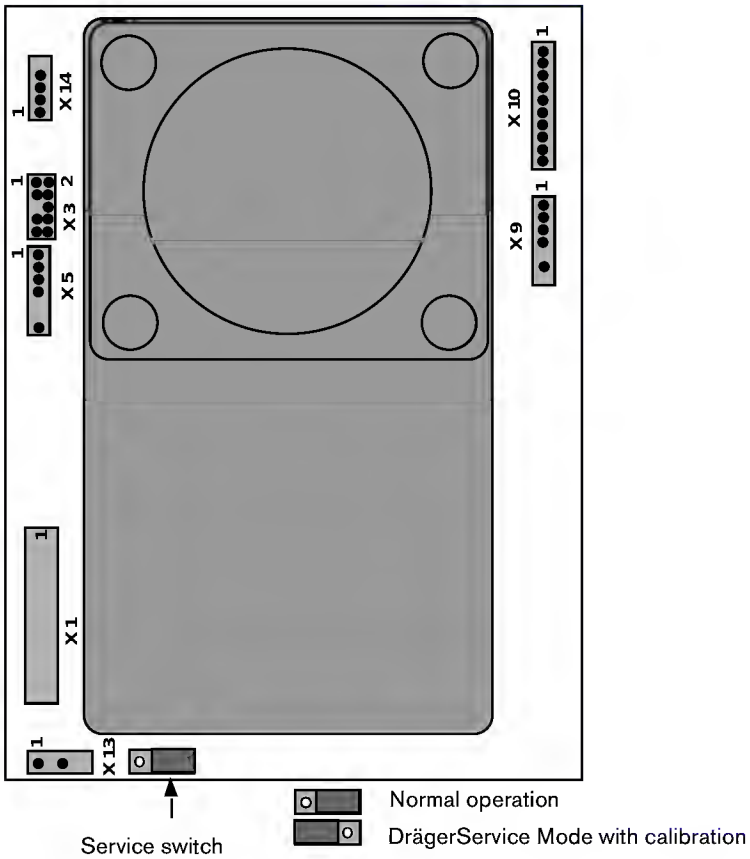

Fig. 3: Control PCB, component mounting side

Note: The service switch is no longer functional in software version 2.00 or higher.

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4.1 Replacing the EPROM

Caution:

Electrostatic discharge may damage electronic components. Use an ESD protection mat and a wrist strap when handling electronic components.

Important:

Make sure to install the EPROM in the correct position.

To replace the EPROM, the Oxylog 2000 must be disassembled (see “Opening the Oxylog 2000” in the Section “General”).

- Remove the EPROM 1 (on the left side of the device) and replace it by a new one.

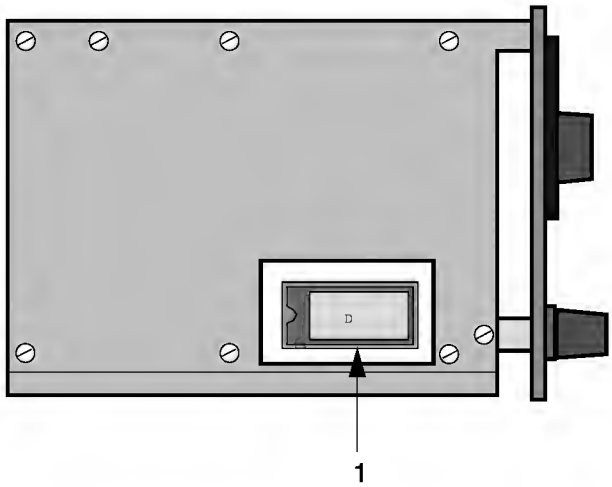

Fig. 4: Left side view of the Oxylog 2000

- Re-assemble the Oxylog 2000.

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4.2 Removing/Replacing the Control PCB

A faulty Control PCB must be replaced completely.

Caution:

Electrostatic discharge may damage electronic components. Use an ESD protection mat and a wrist strap when handling electronic components.

To remove/replace the Control PCB, Oxylog 2000 must be disassembled (see "Opening the Oxylog 2000" in the Section "General").

- Disconnect the cable connectors **1** and **2** on the bottom.

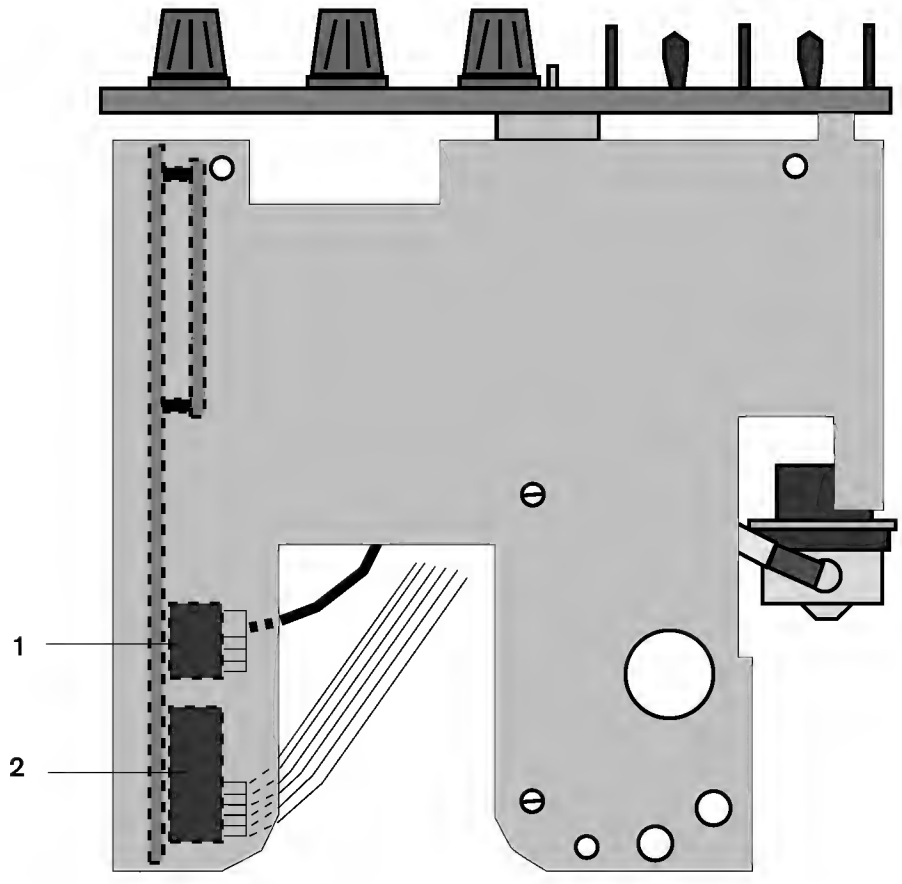

Fig. 5: Bottom view of the Oxylog 2000

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- Disconnect the cable connector **3**.

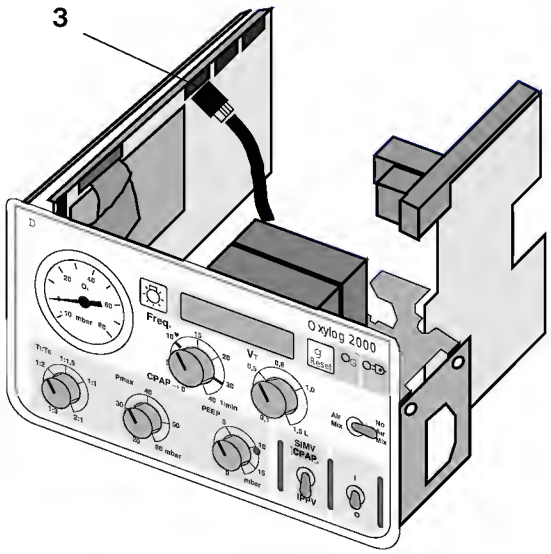

Fig. 6: View of the opened Oxylog 2000

- Remove the lateral screws **4**.

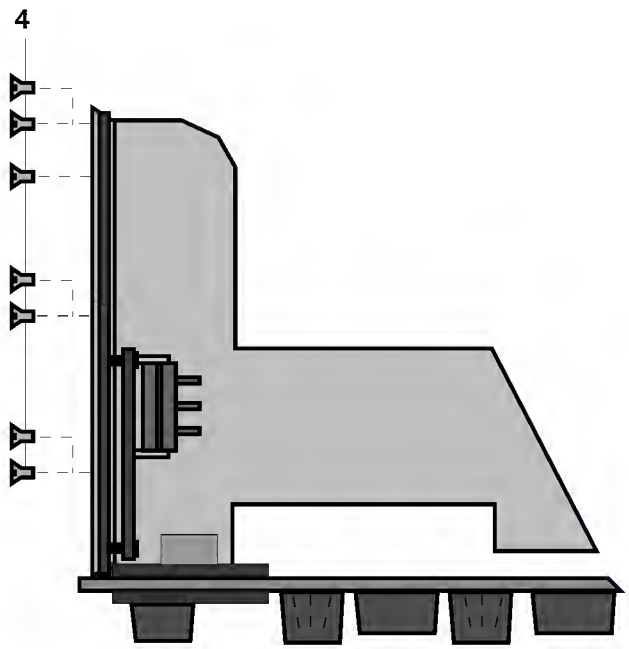

Fig. 7: Removing the fixing screws

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- Disconnect the blue tube to the manometer from the T-piece.
- Disconnect the blue tube to the pneumatics assembly from the T-piece.
- Disconnect the red tube to the copper dosage from the T-piece.
- Disconnect the orange tube to the pressure sensor from the 3/2-way valve.
- Gently disconnect the transparent tubes **5**, **6** and **7** (see Figure below).

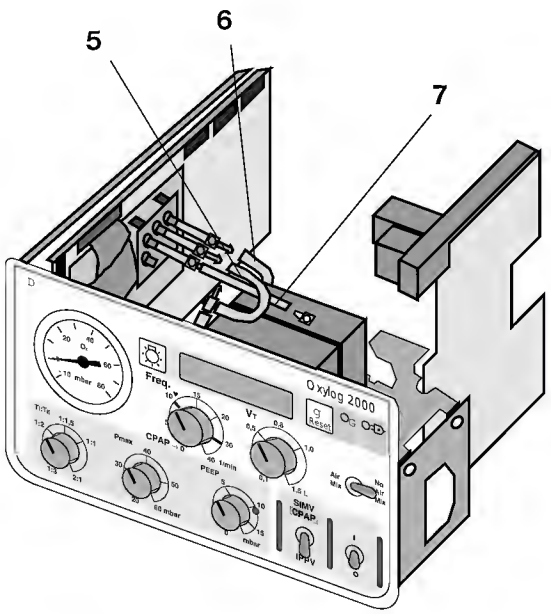

Fig. 8: Oxylog 2000, disconnecting the hoses

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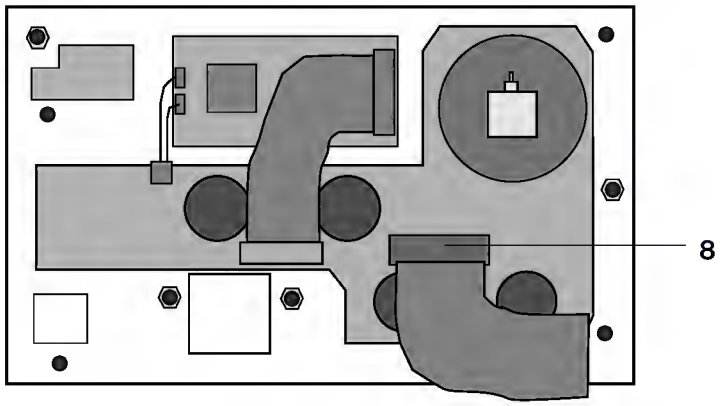
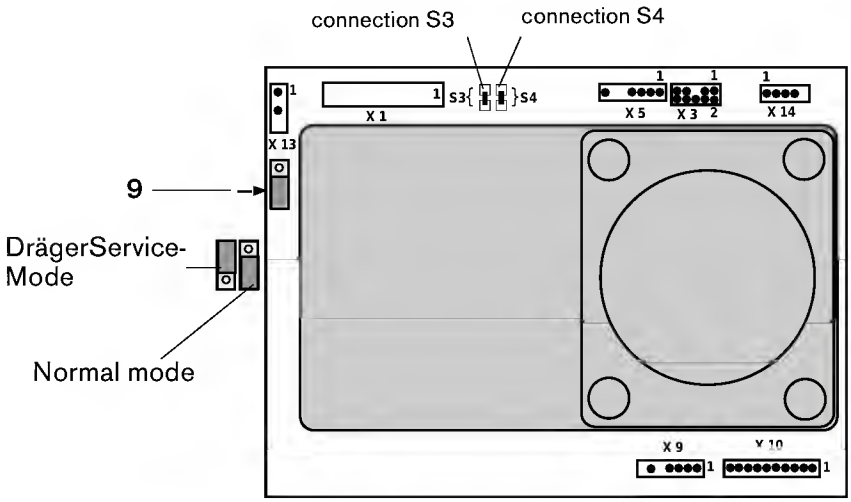
- Pull out the Control PCB slightly and disconnect the cable connector **8** from the front panel.



- Remove the Control PCB.
- Dismount the Sensor PCB from the Control PCB.
- Replace the Control PCB and make sure the service switch **9** is in the position shown in the figure below. (**Note:** The service switch **9** is no longer functional in software version 2.xx or higher).
- If the soldering jumpers **S3** and **S4** are open, use a soldering iron to create the connections as shown in the figure below.



- Remount the Sensor PCB and the Control PCB using the reverse method for dismounting.

Before the first calibration, a new Control PCB will generate the error no. 16. This error will disappear as soon as all values are calibrated (from the Service Mode).

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5 Sensor PCB

A faulty Sensor PCB must be replaced with a new board or a repair-exchange board.

5.1 Dismounting/Replacing the Sensor PCB

Caution:

Electrostatic discharge may damage electronic components. Use an ESD protection mat and a wrist strap when handling electronic components.

To dismount/replace the Sensor PCB, the Oxylog 2000 must be disassembled (see “Opening the Oxylog 2000” in the Section “General”).

The Sensor PCB can only be removed, after removing the Control PCB (see “Dismounting/Replacing the Control PCB” in the Section “Control PCB”). The Sensor PCB is secured to the Control PCB by four nuts and retaining rings.

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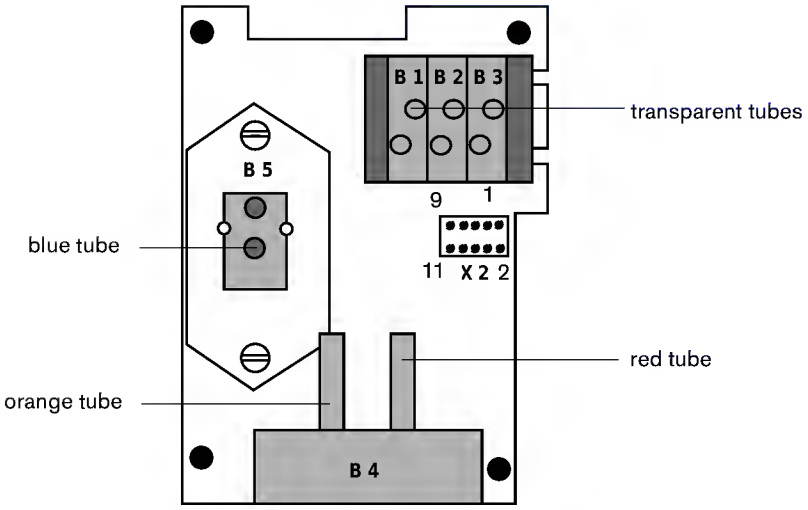

Pressure sensors

B1 P-supply
B2 P-AIRMIX
B3 P-LA
B4 P-flow
B5 P-AW

X2 Connector Pin Assignment

Pin	
1	P-LA
2	VPAW
3	VPSCHALT
4	P-AW
5	DGND
6	AGND
7	P-VERS
8	P-FLOW
9	P-AIRMIX
10	VPFLOW

Fig. 9: Sensor PCB

Caution:

When replacing the Sensor PCB, make sure not to mix up or damage the tubes.
The tubes at B1, B2 and B3 must be replaced (PAE n f 4 x 1, length: approx. 25 mm).

- Mount the Sensor PCB using the reverse method for dismounting.

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6 Display PCB

A faulty Display PCB must be replaced completely.

6.1 Dismounting/Replacing the Display PCB

Caution:

Electrostatic discharge may damage electronic components. Use an ESD protection mat and a wrist strap when handling electronic components.

To dismount/replace the Display PCB, the Oxylog 2000 must be disassembled (see “Opening the Oxylog 2000” in the Section “General”).

Dismount the front panel as follows:

- Remove the screw **1** and the nut **2** including the washer of the module mounting plate.

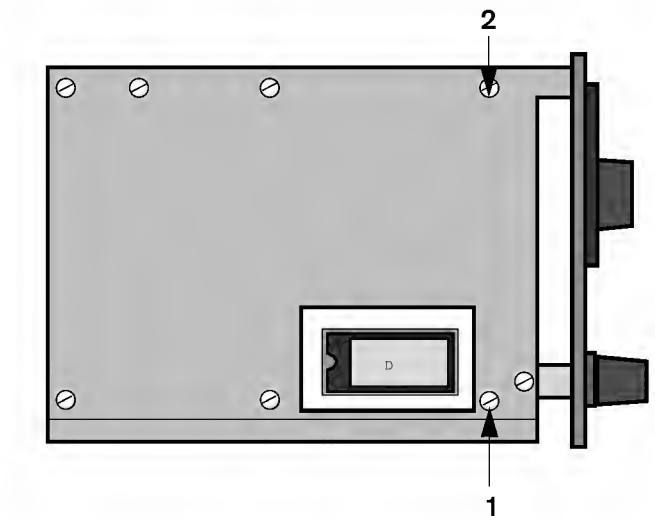

Fig. 10: Left side view of the Oxylog 2000

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- Remove the nuts including the washers **3** and **4** of the module mounting plate (located behind the module mounting plate).

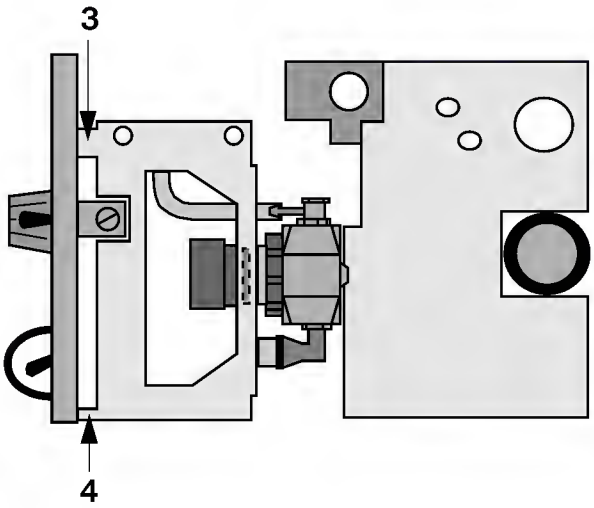
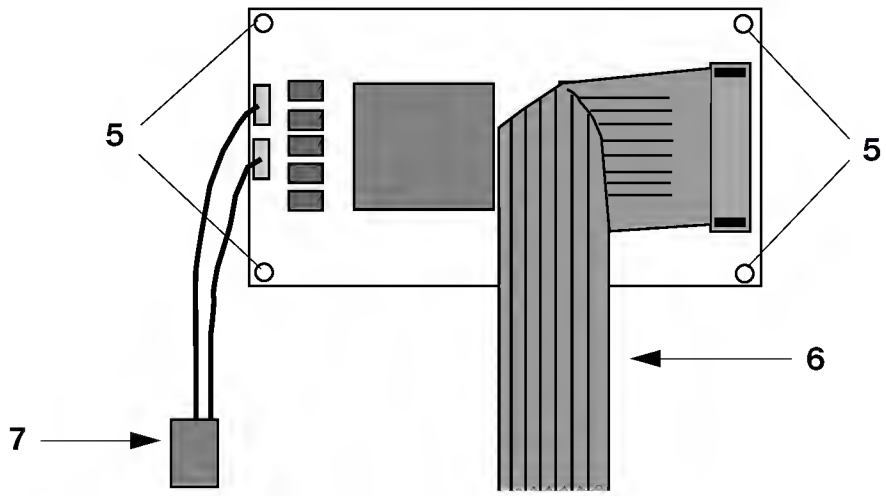


Fig. 11: Right side view of the Oxylog 2000

- Pull out the front panel slightly and disconnect the flat cable **6** and the connecting lead **7** from the Front Panel PCB.



- Remove the nuts **5** from the Display PCB.
- Replace the Display PCB.
- Secure the new Display PCB and re-connect the flat cable **6** and the connecting lead **7** into the front panel (when connecting the connecting lead **7**, make sure the pins are in the correct position).
- Mount the Display PCB using the reverse method for dismounting.

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7 Front Panel

A faulty front panel must be replaced completely.

Important:

Make sure to order the correct version of the front panel: Software Version 1.xx, 2.xx or 3.xx, the Standard, French or USA version.

7.1 Dismounting/Replacing the Front Panel

Caution:

Electrostatic discharge may damage electronic components. Use an ESD protection mat and a wrist strap when handling electronic components.

To dismount/replace the front panel, the Oxylog 2000 must be disassembled (see “Opening the Oxylog 2000” in the Section “General”).

- Remove the manometer (see the Section “Manometer”) and dismount the front panel as follows:

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- Remove the screw **1** and the nut **2** including the washer of the module mounting plate (covered by the module mounting plate).

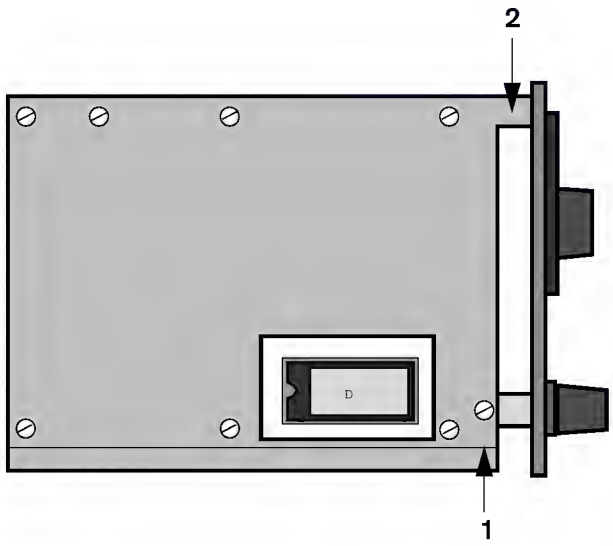

Fig. 12: Left side view of the Oxylog 2000

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- Remove the nuts **3** and **4** including the washers of the module mounting plate (covered by the module mounting plate).

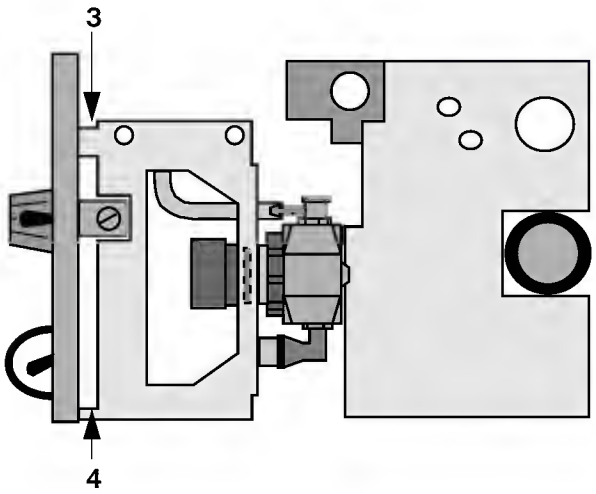

Fig. 13: Right side view of the Oxylog 2000

- Disconnect the leads **6** (note down the terminal assignments) and **7** and remove the nuts **5** including the washers.

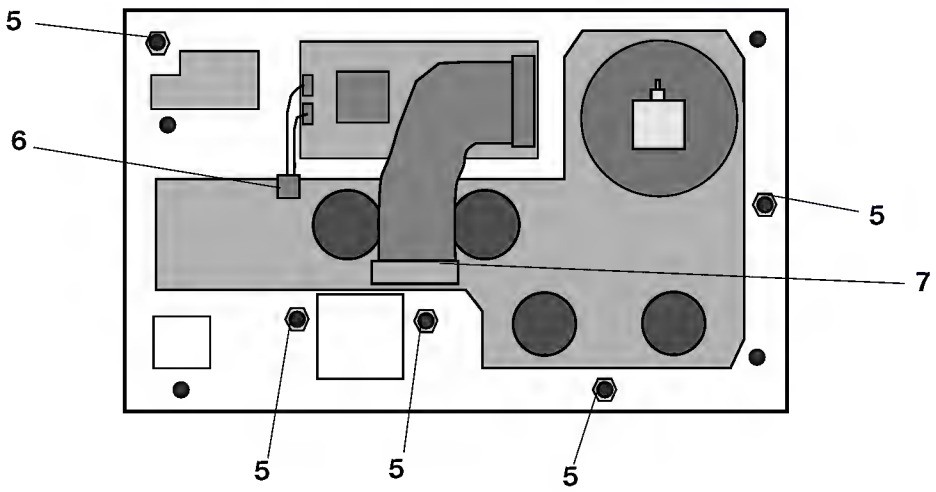

Fig. 14: Front panel PCB

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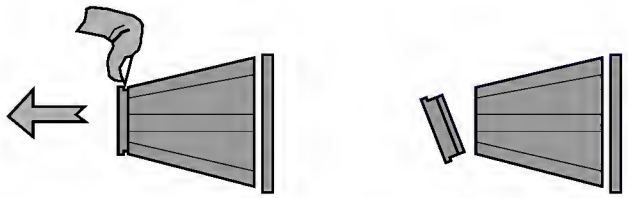
- Remove the front button caps (as shown in the Figure below).



- Remove the front buttons **8** from the potentiometer shaft.

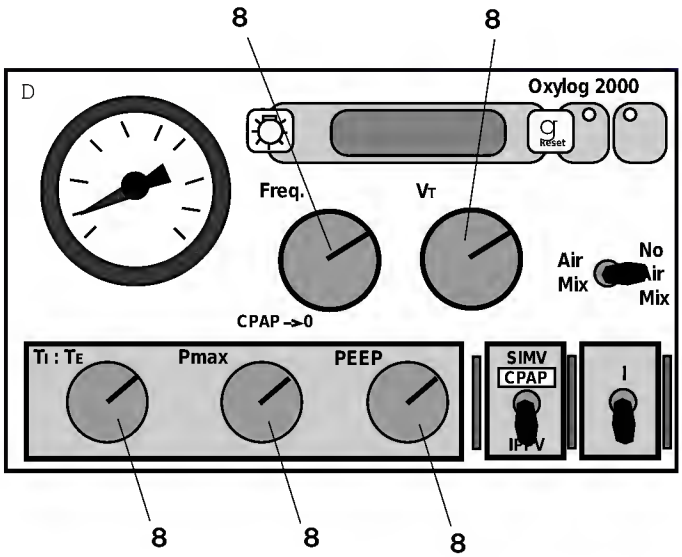


Fig. 15: Front view of the Oxylog 2000

- Replace the front panel and mount the Oxylog 2000 using the reverse method for dismounting.

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8 Manometer

8.1 Dismounting/Replacing the Manometer

- To dismount/replace the manometer, the Oxylog 2000 must be disassembled (see “Opening the Oxylog 2000” in the Section “General”).
- Loosen the screw **1** of the tube clamp.

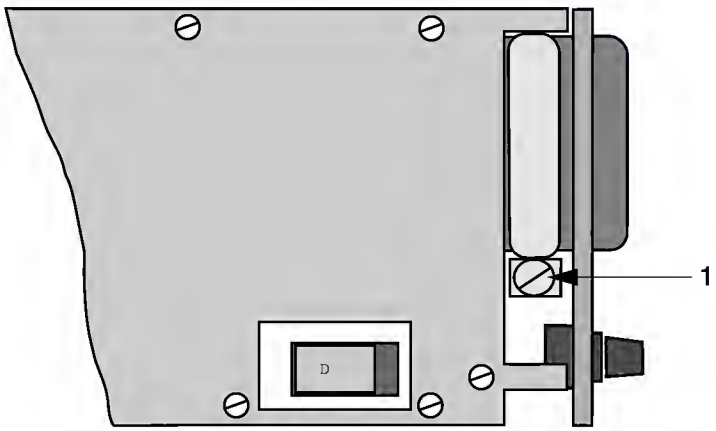

Fig. 16: Left side view of the Oxylog 2000

- Remove the manometer by gently pressing it from the inside and sliding it out of the front panel (towards **A**).

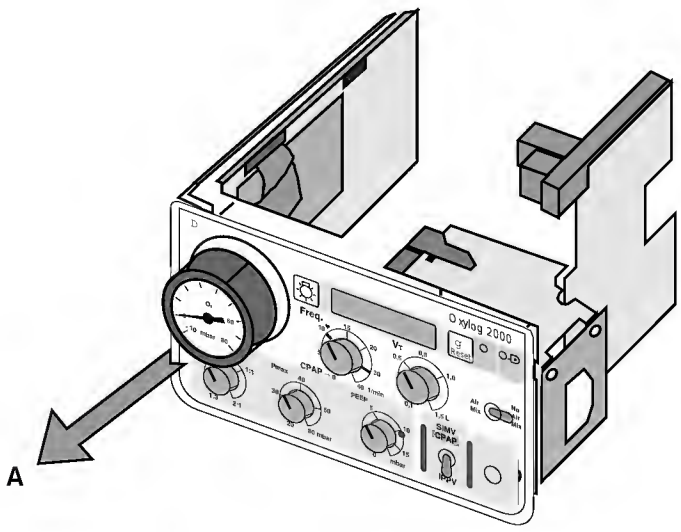

Fig. 17: Front view of the Oxylog 2000

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- Disconnect the tube **2** from the manometer.

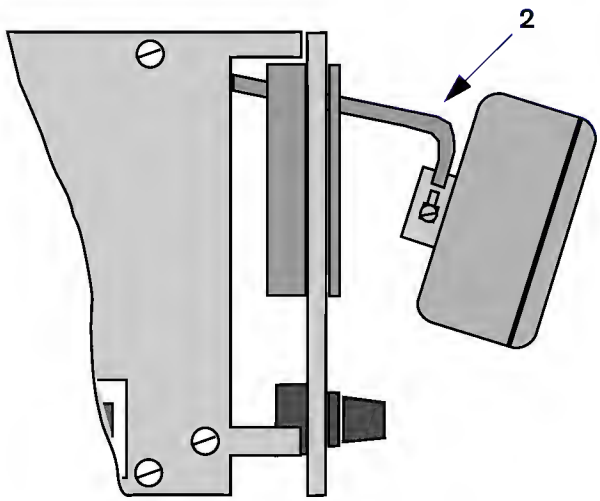

Fig. 18: Left side view of the Oxylog 2000, disconneting the hose

- Replace the manometer with the new one.
- When fitting the new manometer, make sure the manometer and the sealing are arranged properly.
- Assemble the device using the reverse method for disassembly.
- Check the function of the manometer (functional check).

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9 Pressure Regulator

The pressure regulator of the Oxylog 2000 must be subjected to a major overhaul after 6 years of service.

9.1 Replacing the Spare Parts Set of the Pressure Regulator

To replace the spare parts set, the Oxylog 2000 must be disassembled (see “Opening the Oxylog 2000” in the Section “General”).

9.1.1 Dismounting the I:E, P/N Valve Mounting Plate

- Remove the retaining screws from the mounting plate 1 and put the mounting plate aside.

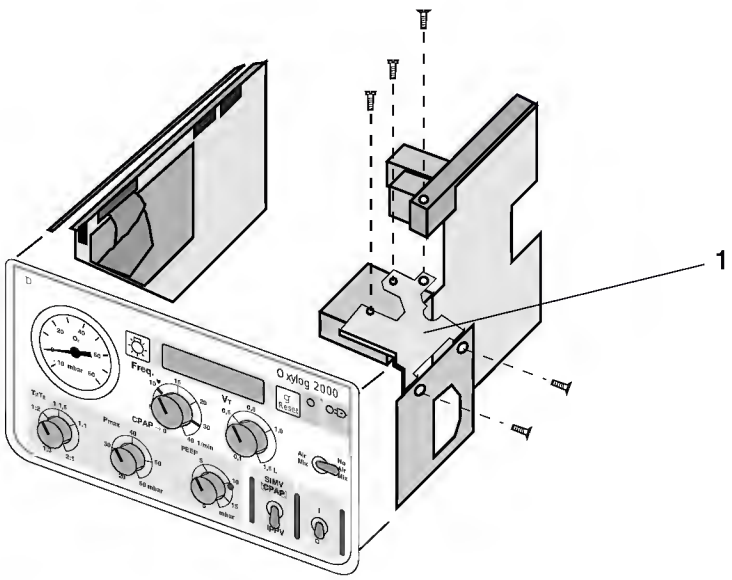

Fig. 19: View of the Oxylog 2000, removing the mounting plate

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9.1.2 Dismounting the Pressure Regulator DR 1

- Disconnect the hose **2** by pressing the retaining ring **3**.
- Pull off the hose **4**.

Caution:

When removing the pressure regulator make sure not to damage the hoses.

- Remove the fixing nut **5** of the pressure regulator with a pair of small pliers and remove the pressure regulator.

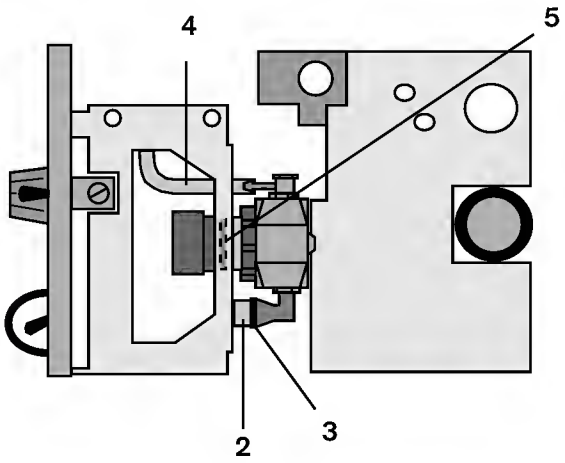

Fig. 20: Right side view of the Oxylog 2000, removing the pressure regulator

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9.1.3 Pressure Regulator DR 1: Mounting the Spare Parts Set

- Before fitting the new spare parts set, you must close the pressure regulator by unlocking the adjusting ring **6** (pull towards **A**).
- Turn the adjusting ring **6** counterclockwise towards **B** as far as it will go.
- Remove the nut **7**.
- Replace the pressure regulator spare parts set.
- Reassemble the pressure regulator.

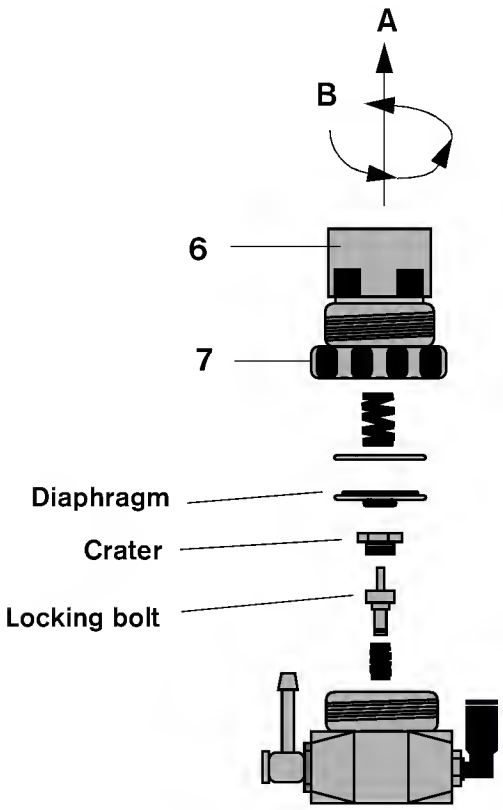

Fig. 21: View of the opened pressure regulator

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- Mount the pressure regulator including the fixing nut **8**.

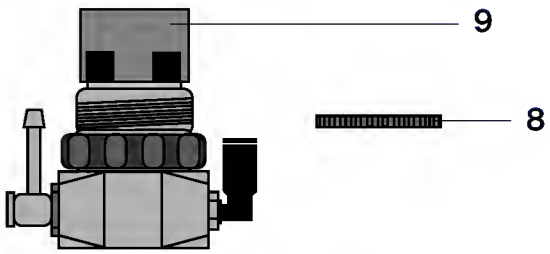

Fig. 22: View of the pressure regulator

9.1.4 Adjusting the Pressure Regulator DR 1

- Connect a manometer to the T-piece.
- Select Test 11 from the Service Mode.
- Adjust a flow of 40 L/min and set the pressure regulator with the adjusting ring 9 to 2.4 to 2.6 bar.
- Press the adjusting ring **9** down so that the adjusted value can not be changed unintentionally.
- Assemble the Oxylog 2000 using the reverse order of that used for disassembly.

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10 Pneumatics Assembly

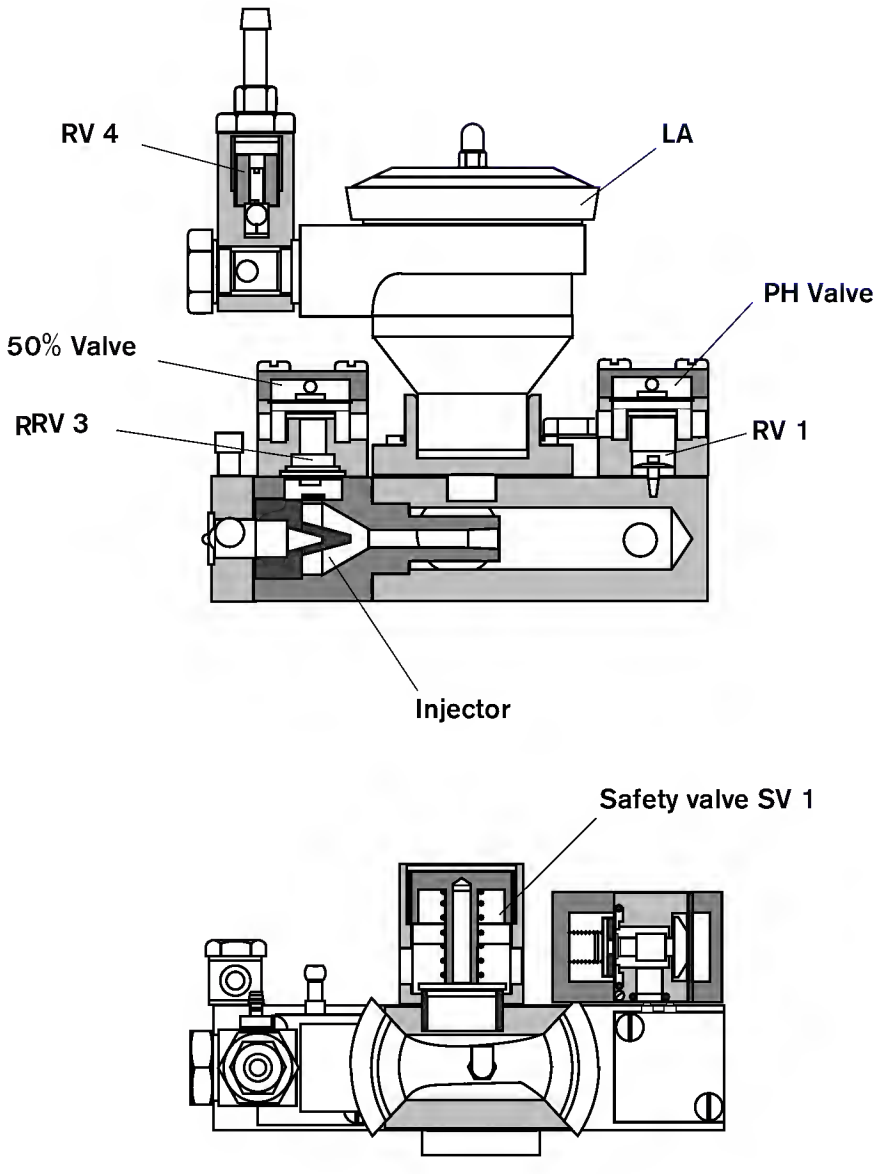

Fig. 23: Cut off of the pneumatics assembly

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10.1 Safety Valve

- If the safety valve does not function correctly, adjust it with the adjusting screw.
- If this does not help, clean the safety valve.
- To clean the safety valve unscrew the adjusting screw and remove the spring and the valve plate.

10.1.1 Adjusting the Safety Valve

- Should the safety valve not vent correctly, adjust it with the adjusting screw.
- Follow the instructions under “Safety Valve” in the Test Certificate.
- After adjusting the safety valve, you must secure the adjusting screw of the safety valve with screw locking agent.

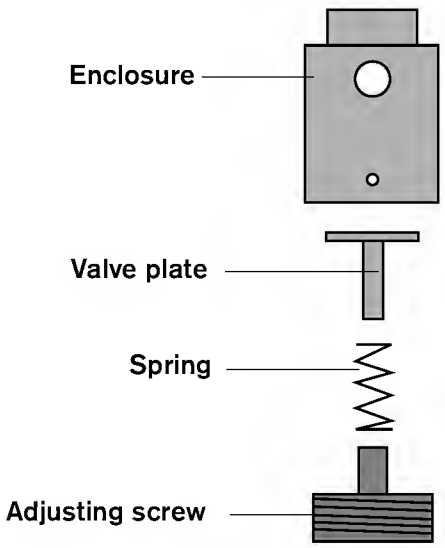

Fig. 24: View of the safety valve

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11 MV Valve

11.1 Dismounting/Replacing the MV Valve

To dismount/replace the MV valve, the Oxylog 2000 must be disassembled (see “Opening the Oxylog 2000” in the Section “General”).

Caution:

Electrostatic discharge may damage electronic components. Use an ESD protection mat and a wrist strap when handling electronic components.

- Disconnect the tube 1 from I:E valve.

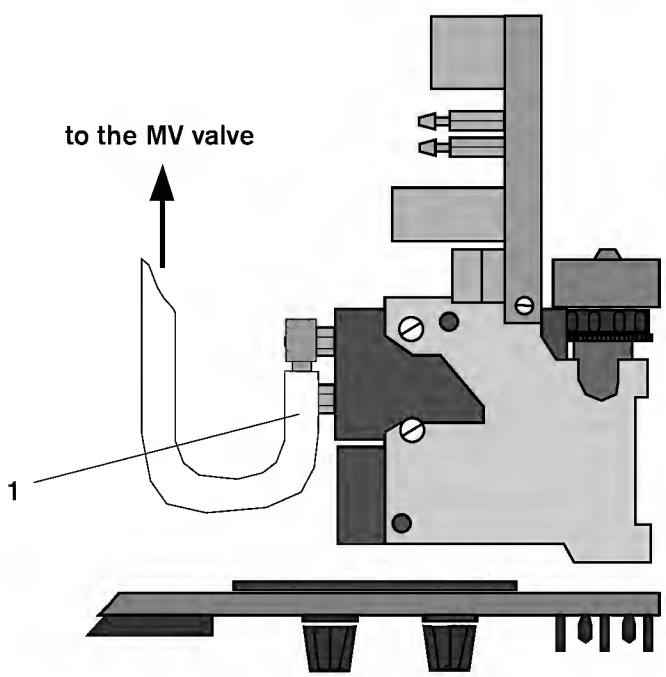

Fig. 25: View of the MV Valve, disconnecting the hose

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- Disconnect the lead **2**.
- Remove the screws **3**.

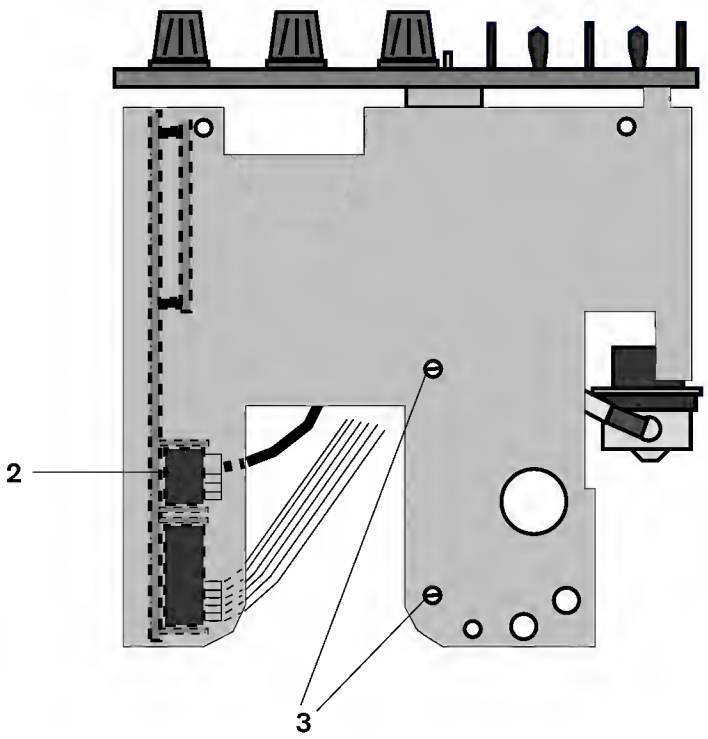

Fig. 26: Bottom view of the Oxylog 2000

- Disconnect the tube **4** from the I:E valve and the tube **5** from the pneumatics assembly.

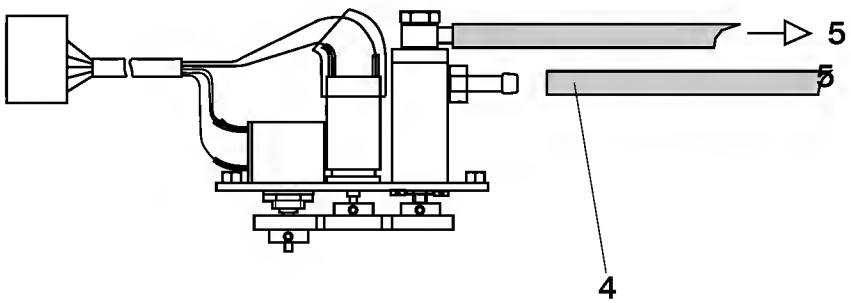

Fig. 27: View of the MV Valve

- Replace the MV valve.
- Reassemble the Oxylog 2000 using the reverse order for disassembly.

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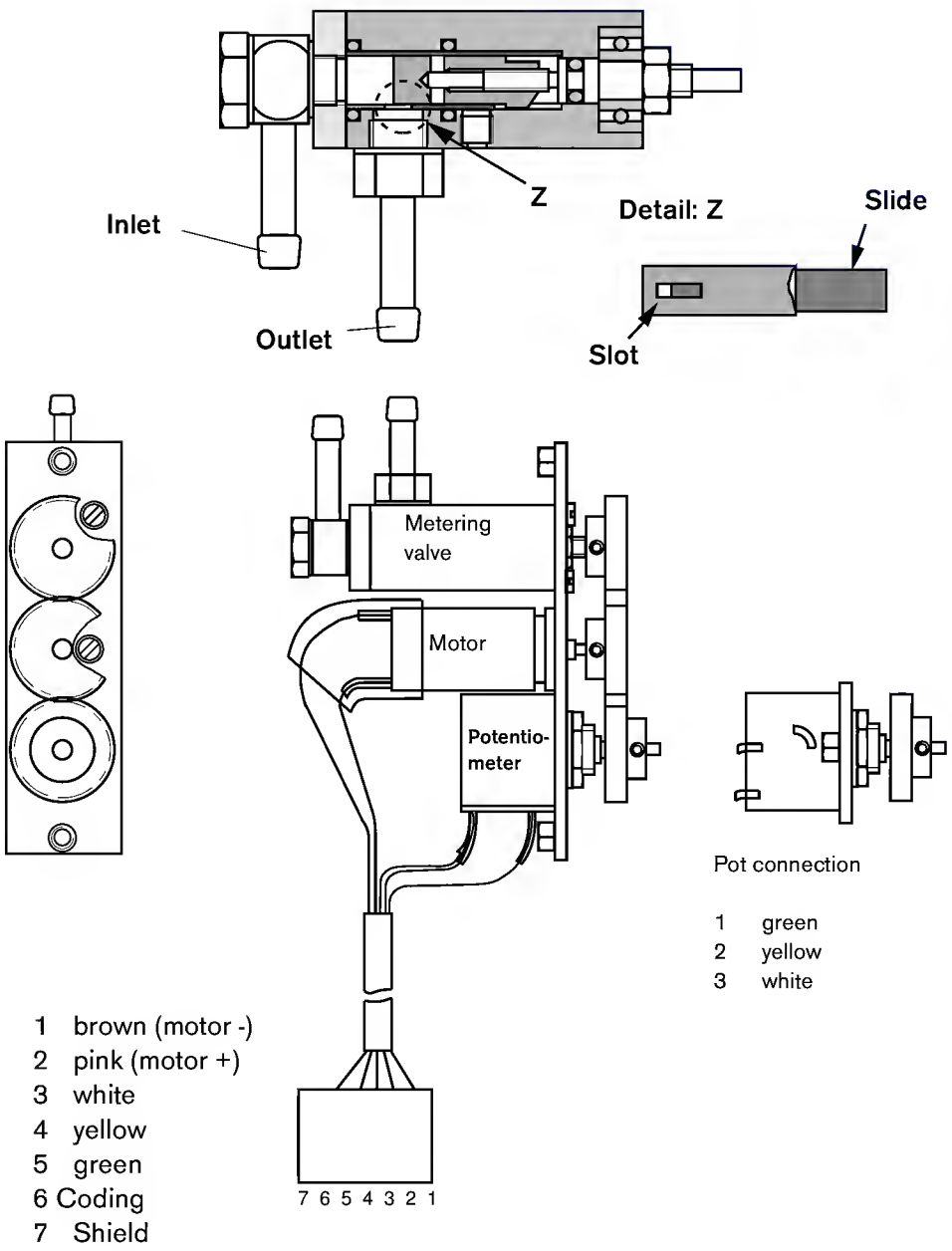

Fig. 28: View of the MV Valve

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12 Gas Inlet

The gas inlet subassembly consists of the following components:

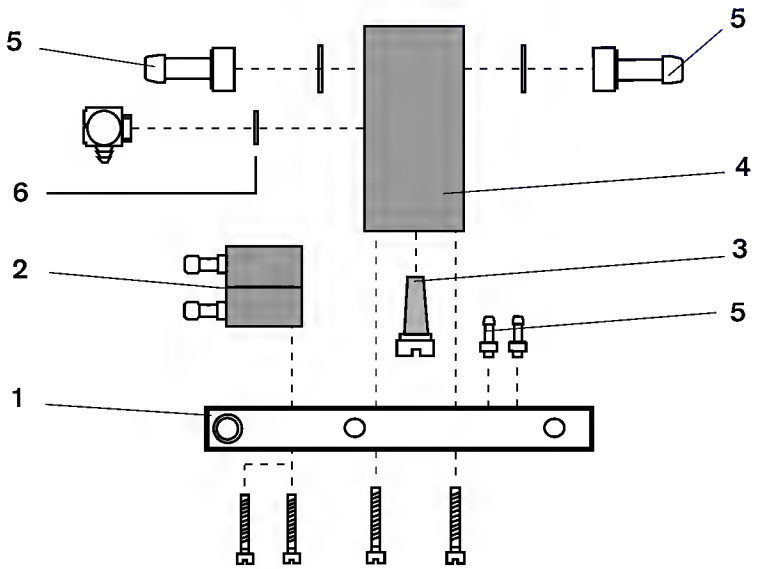

Fig. 29: View of the Gas Inlet

Legend

1 Connection plate

2 RV2 valve

3 Filter

4 Gas inlet block

5 Gas connections

6 Insert dosage R4

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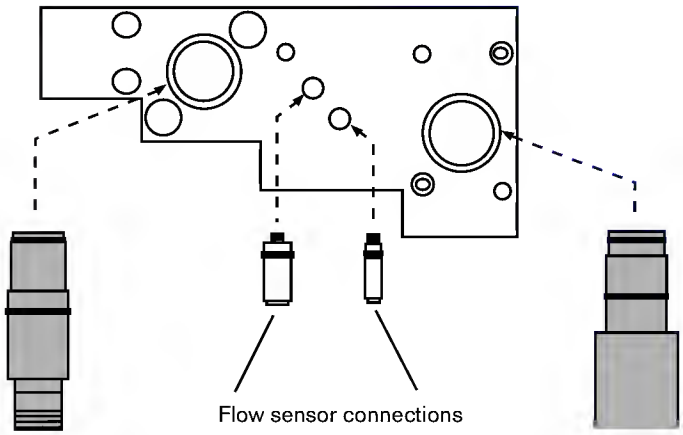

Caution:

Make sure not to interchange the connections.

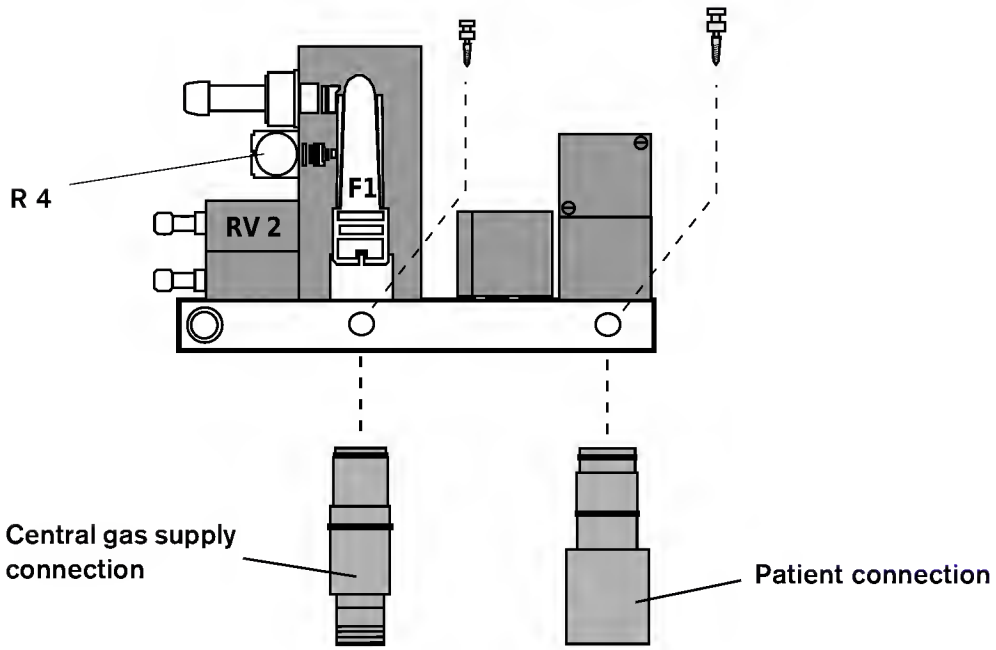

Fig. 30: View of the Gas Inlet

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12.1 Testing the Autozero Valve (Sofware version 1.xx)

The Autozero valve is checked with Test 13 from the DrägerService-Mode.

12.2 Testing the Autozero Valve (Software version 2.xx)

The Autozero valve is checked with Test 16 from the DrägerService-Mode.

12.3 Dismounting/Replacing the Autozero Valve

To dismount/replace the Autozero valve, the Oxylog 2000 must be disassembled (see “Opening the Oxylog 2000” in the Section “General”).

Caution:

Electrostatic discharge may damage electronic components. Use an ESD protection mat and a wrist strap when handling electronic components.

- Disconnect the hoses **1**, **2** and **3**.

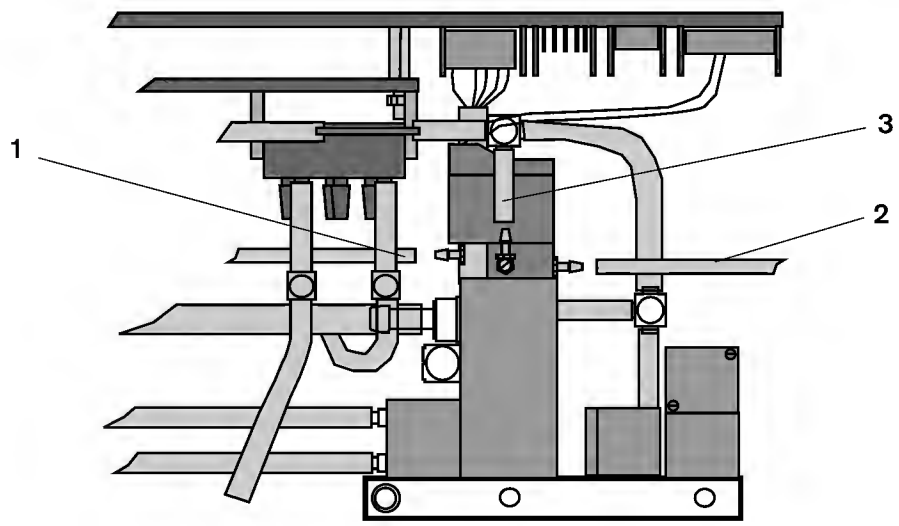

Fig. 31: View of the Autozero Valve, disconnecting the hoses

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- Disconnect the cable plug-in connector **4** at the bottom of the Control PCB.

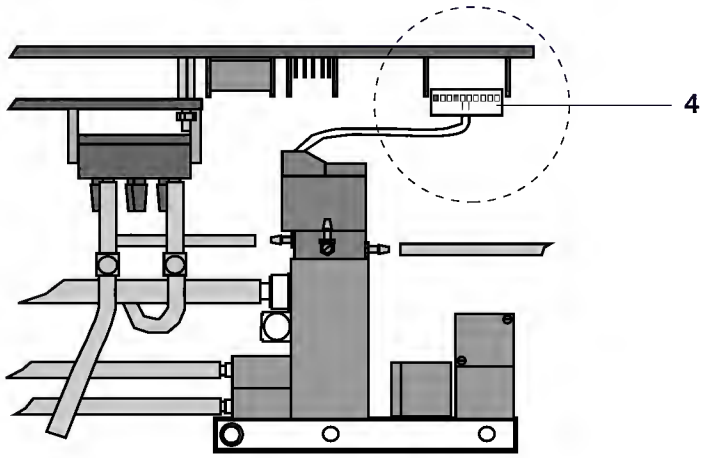

Fig. 32: View of the Autozero Valve connector

- Carefully lift the latch tabs **A** with a small screwdriver.
- Pull out the leads with pins **5** and **6** from the jack.

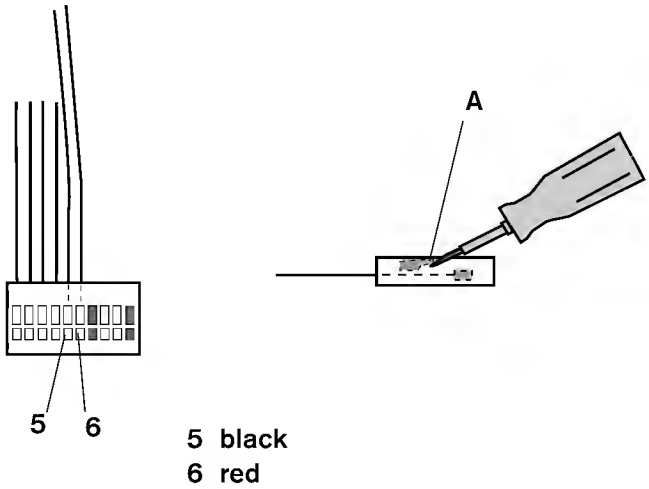

Fig. 33: View of the jack

- Replace the Autozero valve and reassemble the Oxylog 2000 using the reverse order for disassembly.

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13 Ventilation Valve Oxylog 2000

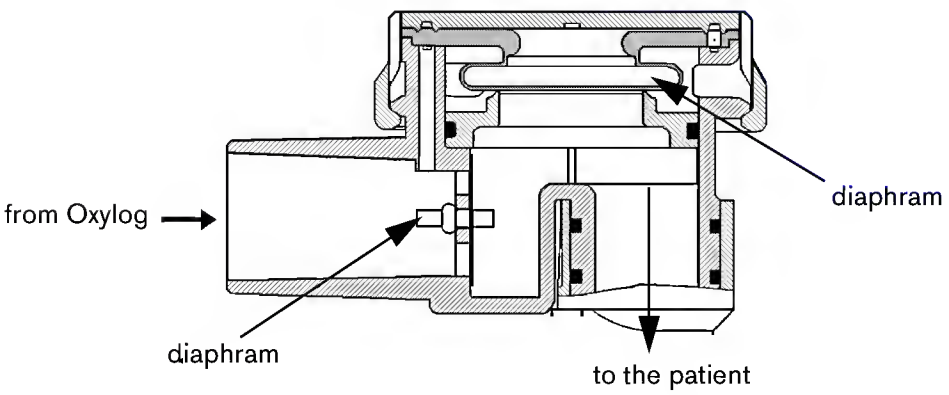

Fig. 34: View of the Ventilation Valve

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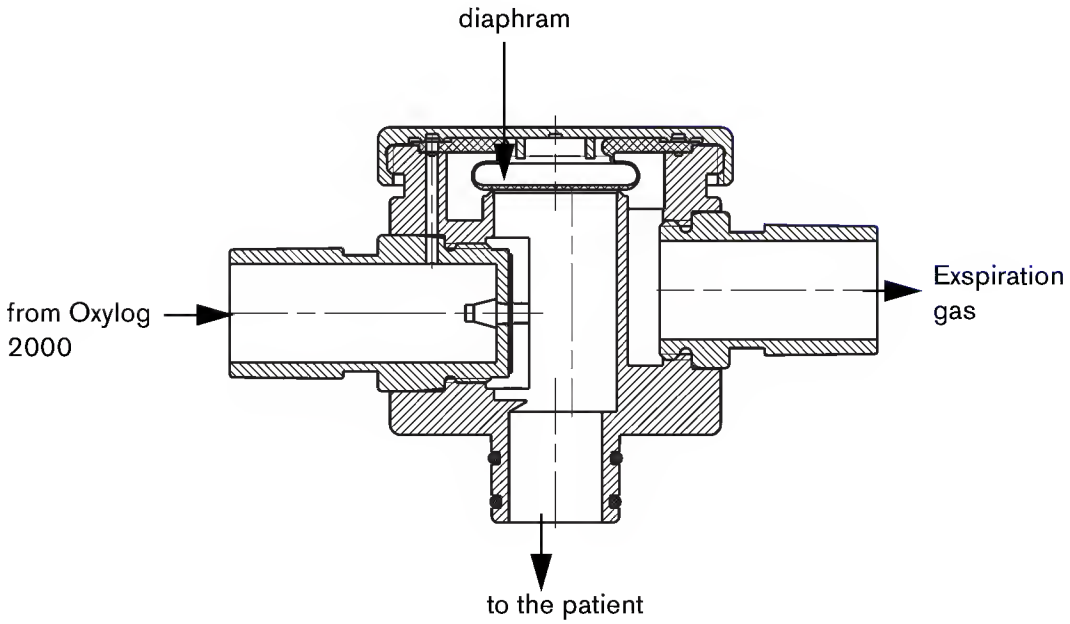
14 Ventilation Valve Oxylog 2000 HBO



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